**EMILY KRACH**

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(443) 617-0770 | ekrach@uga.edu

**EDUCATION\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**University of Georgia, Athens, GA** August 2016-Present

PhD Candidate, Department of Genetics

**University of Maryland, College Park, MD** August 2012-May 2016

B.S. Cell Biology & Molecular Genetics

Minor in Sustainability Studies

University Honors Program

**RESEARCH & PROFESSIONAL EXPERIENCE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Graduate Research Assistant, University of Georgia Dept. of Genetics** August 2016-Present

*Using high-throughput phenomics to characterize conidiophore architecture*

*in* *Neurospora crassa*, advised by Jonathan Arnold

**Intern, University of Georgia Innovation Gateway** June-August 2019

Evaluated life science technologies developed by university researchers for

patentability and commercial potential, mentored by Rachael Widener

**Research Intern, Smithsonian National Museum of Natural History** September-December 2015

*The role of time since colonization in novel habitats and its effects on the   
evolution of plant mating systems and the reproductive ecology of  
Mimulus guttatus,* advised by Liz Zimmer and Jason Berg

**Stanley Scholar, Johns Hopkins Stanley Division of Developmental Neurovirology**

*Differential expression of RNA repetitive elements in Toxoplasma* May-August 2015 *gondii infected mouse tissues*, advised by Miranda Darby

*Splice isoforms associated with schizophrenia, bipolar disorder, and* May-August 2014 *major depressive brains*, advised by Miranda Darby

*Intergenic transcripts containing repeat elements dysregulated in* May-August 2013 *psychiatric disorders*, advised by Miranda Darby

**Undergraduate Research Assistant, University of Maryland** January-May 2015 **Dept. of Biological Sciences**

*The role of time since colonization in novel habitats and its effects on the   
evolution of plant mating systems and the reproductive ecology of   
Mimulus guttatus,* advised by Jason Berg

**Research Intern, Johns Hopkins Dept. of Pathology & Oncology** June-August 2012 **Tissue Services**

*Optimizing immunohistochemistry protocols in human cancer tissues*, advised

by Alan Meeker

**RESEARCH SUPPORT\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Graduate Student Travel Award ($600)** October 2018

University of Georgia Graduate School

**ARCS Foundation Scholarship ($24,000)** August 2018

ARCS Atlanta Chapter

**Innovative and Interdisciplinary Research Grant ($2,500)** May 2017

University of Georgia Graduate School

**PEER-REVIEWED PUBLICATIONS\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Caranica, C., Cheong, J. H., Qiu, X., **Krach, E. K.,** Deng, Z., Mao, L., Schuttler, H.B., Arnold, J. (2019). What is Phase in Cellular Clocks? *The Yale journal of biology and medicine*, *92*(2), 169–178.

**PRESENTATIONS\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

*Oral*

**Using DIRT to Characterize Conidiophore Architecture in *N. crassa*** August 2019

Annual Retreat, UGA Department of Genetics, Athens, GA

**Characterizing Conidiophore Architecture in *N. crassa*** April 2019

Student Seminar, UGA Department of Genetics, Athens, GA

**Use of Microfluidics to Explore Filamentous Networks in *N. crassa*** February 2018

Student Seminar, UGA Department of Genetics, Athens, GA

**Collective Behavior in Filamentous Fungi** January 2018

3-Minute Thesis Competition, UGA Department of Genetics, Athens, GA

**Hyphal Network Formation in *Neurospora crassa*** October 2017

Student Seminar, UGA Department of Genetics, Athens, GA

*Poster*

**Characterization of Conidiophore Architecture in *Neurospora crassa*** October 2018

Neurospora Meeting, Pacific Grove, CA

**Hyphal Network Formation in *Neurospora crassa*** July 2017

Mycological Society of America Meeting, Athens, GA

**Examining Novel Intergenic Transcripts Containing Repetitive Elements** August 2015

**Dysregulated in Psychiatric Disease**

Johns Hopkins Stanley Division of Developmental Neurovirology, Baltimore, MD

**Using RT-PCR to Examine Transcriptional Variants Associated with** August 2014

**Schizophrenia and Bipolar Disorder**

Johns Hopkins Stanley Division of Developmental Neurovirology, Baltimore, MD

**TEACHING & MENTORING EXPERIENCE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Mentor to Undergraduate LSAMP Student Tatiana Lim-Tom** January 2018-Present

University of Georgia, Department of Genetics

**Mentor to Summer REU Student DeAndre Tomlinson** May-July 2018

University of Georgia, Department of Genetics

**Mentor to CURO Honors Student Brooke Hull** January 2017-May 2018

University of Georgia, Department of Genetics

**Graduate Teaching Assistant, Genetics** January-June 2017

University of Georgia, Department of Genetics

**Undergraduate Teaching Assistant, University Honors 100** January 2014-December 2015

University of Maryland, Honors College

**OUTREACH ACTIVITIES\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Vice President, Mycology Graduate Student Organization** May 2018-May 2019

University of Georgia, Fungal Biology Interdisciplinary Group

**Travel Award Committee, Genetics Graduate Student Association** April 2019

University of Georgia, Department of Genetics

**Genetics Graduate Student Representative, Recruitment Panel** January 2019

University of Georgia, Integrated Life Sciences Program

**Co-President,** **Genetics Graduate Student Association** April 2017-April 2018

University of Georgia, Department of Genetics

**Junior Division Science Fair Judge** March 2017, 2018

Georgia Science & Engineering Fair

**ADDITIONAL TRAINING\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Sapelo Cluster Training** August 2017

Georgia Advanced Computing Resource Center

**Python I/II Training** September 2016

Georgia Advanced Computing Resource Center